

2001 Trial Transcripts Part 8

[13] QUESTION: And it is by measuring [14] the position of the inlet guide vanes that the APS [15] 3200 surge control system insures that it does not [16] go into low-flow mode when it actually should be [17] in high-flow mode; correct?

[18] ANSWER: Correct. [19] Thank you, Mr. Putnam. Actually, I [20] should probably keep the Elmo on. What I'm going [21] to do is I'm going to show you a copy of what [22] you're going to have in the jury room as the [23] verdict form, I suspect Mr. Ziegler is going to do [24] the same.

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[1] And the first two questions that [2] you're going to be asked are, Has Honeywell shown [3] by a preponderance of the evidence that Hamilton [4] Sundstrand's APS 3200 product literally infringes [5] Claim 4 of the '194 patent?

[6] Now, the one you're getting in the [7] jury room wouldn't have an X there yet. I put [8] that there. Because I think that's the right [9] answer. But that's for you to decide. That's [10] your decision based on the evidence, based on what [11] you think is right, but I thought I would at least [12] put up there my position.

[13] And on the second question, Has [14] Honeywell shown by a preponderance of the evidence [15] that Hamilton Sundstrand APS 3200 product [16] infringes Claim 4 of the '194 patent under the [17] doctrine of equivalents?

[18] And the answer is yes, too. [19] Then we go to Claim 8 of the '893 [20] patent, that's the apparatus patent, that's the [21] one that covers the mechanism for doing this. And [22] again, they admit most of the elements are met.

[23] They admit that the APS 3200 has all [24] the things that they say here Sundstrand admits,

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[1] yes, or Sundstrand's expert admits yes. [2] As you can see there is two in [3] dispute. Five out of seven they agree. The other [4] two they take issue with.

[5] And the first one talks about [6] sensing means for sensing the value of a [7] predetermined, flow-related parameter within said [8] duct means, et cetera, et cetera.

[9] We've already been through that, [10] haven't we, that's DELPOP or Delta P over P and [11] the evidence that I mentioned a little while ago [12] about the sensing and the duct. So I mean, it's [13] the same evidence, same proof.

[14] And you'll remember that was also [15] the testimony that I put up or the admission from [16] Mr. Greubel, the guy who they brought in and said, [17] hey, I did this.

[18] And then this says further that the [19]

flow-related parameter being substantially [20] independent of the temperature of the compressed [21] air. So there is temperature in there, let's talk [22] about that because I don't want you to think I [23] skipped over that.

[24] Mr. Muller testified in the last

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[1] part of claim D, part D of Claim 8:

[2] "Is said value of said flow-related [3] parameter being substantially independent of the [4] temperature of the compressed air, is that part [5] also met by the appears 3200?"

[6] ANSWER: Yes. [7] And for Mr. Ziegler's benefit, [8] that's at 644. I think it's right on there. We [9] put it on there so we don't have to worry about [10] trying to find it.

[11] The next, element E, Sundstrand [12] admits that.

[13] Next element is element F, that's [14] the one that they dispute. Varying set point as a [15] function of the position of inlet guide vanes.

[16] We admit, they don't do it exactly [17] the same way that the patent calls for, but they [18] do it in a way that's not substantially different [19] and we talked about that already. I already put [20] that evidence up with respect to how the [21] flow-related parameter and the surge set point are [22] functions and related to the inlet guide vane [23] position.

[24] Also, in addition, they have the

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[1] high flow/low flow and the inlet guide vanes used [2] to switch back and forth to that, you remember all [3] about that.

[4] So those are the two elements that [5] they dispute on Claim 8.

[6] Now, remember we also have claims 10 [7] and 11 in the case, those are the dependent [8] claims. Those are the ones that are dependent on [9] Claim 8. You got to meet all the elements of [10] Claim 8, they admit.

[11] I think you remember Mr. Shinsky [12] admitting this, if they infringe Claim 8 they have [13] the extra element of Claim 10, and the extra [14] element of Claim 11. They don't argue that they [15] don't. They admit if they infringe Claim 8, they [16] also infringe Claim 10 and 11.

[17] Then we go to claim 19, and again, [18] out of all the elements in Claim 19, we have got [19] eight elements there, I think, I think I counted [20] them up right. They admit they have six of them, [21] so the only ones you have to worry about are two.

[22] Element B, well, that looks [23] familiar. A sensing device having a sensing [24] portion adapted to be positioned in

the duct to

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[1] sense there in a predetermined parameter related [2] to the air flow rate through the duct, said [3] sensing device further having an output portion.

[4] We've already been through that. We [5] had Delta P over P, that's the flow-related [6] parameter, and I showed the evidence with respect [7] to — their witnesses admit that it's measured in [8] the duct.

[9] And Mr. Muller testified to that as [10] well. Then we have, what's the next one, it's [11] element G. They admit C, D, E and F. Let me get [12] down to G, a guide vane position sensor and a [13] function generator coupled in series between the [14] inlet guide vanes and said input portion of said [15] comparator.

[16] We talked about this already. The [17] flow-related parameter DELPOP is a function or [18] related to inlet guide vane position. There is no [19] question they have a guide vane position sensor. [20] We talked about that with everybody, everybody [21] agrees they have a sensor. The question is, what [22] do they do with it? [23] And they use it in part to develop [24] their DELPOP, or Delta P over P and the surge set

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[1] point. So that takes care of that. There is no [2] question, I think, about the input to the [3] comparator. We have got testimony from that and [4] there was a drawing that showed it and Mr. Muller [5] talked all about that.

[6] Then we go to dependent Claim 23, [7] and again dependent Claim 23 is just an extra [8] element to Claim 19, and they admit that if we [9] infringe — or if they infringe Claim 19 they also [10] infringe Claim 23. Remember, to win, all we have [11] to do is win one claim.

[12] You may ask why did we put in all [13] these other ones, that was partly because of the [14] invalidity arguments. We wanted to deal with [15] fairly with the two patents that way, but all we [16] have to win on is one.

[17] So the next question on the jury [18] verdict form, question number three, Has Honeywell [19] shown by a preponderance of the evidence that [20] Hamilton Sundstrand's APS 3200 product infringes [21] any of the following claims of the '893 patent [22] under the doctrine of equivalents?

[23] And again, I've put the X's there to [24] indicate that we think we have.

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[1] Again, this is preponderance of the [2] evidence, remember. If the scales tilt a little [3] bit in our favor, then we win.

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[1] fair thing that they did.
[2] And there is no evidence it doesn't [3] infringe. The actual testimony by Mr. Muller [4] would include the design even without that high [5] flow/low flow cutoff.
[6] All right. Last point. Reasonable [7] royalty.
[8] Do you remember I did this with [9] Mr. Staats? And the reason I did it with [10] Mr. Staats was because Ms. Davis didn't have all [11] the information. Mr. Staats had access to some [12] information about sales made by Hamilton [13] Sundstrand between February 3rd, '99 and February [14] 19th, next Monday, 2001, with respect to these are [15] the sales made by Hamilton Sundstrand.
[16] And Mr. Staats had information, [17] Ms. Davis didn't have. So what I did was I took [18] the number he had for these OEM sales, because [19] they hadn't given that to Ms. Davis and I [20] multiplied it by two to come up with the [21] aftermarket sales.
[22] Do you remember Mr. Johanson [23] admitted they make all their money on the [24] aftermarket sales?

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[1] You know what I discovered after I [2] got back to the office, I made a mistake.
[3] Ms. Davis testified the number should be 2.2. Her [4] actual testimony was the amount of aftermarket [5] compared to OEM is 2.2, I only used 2, so my [6] mistake. I'll live with it.
[7] 12 percent, that's the royalty [8] figure you heard from us. That's what you come up [9] with, you add interest, pre-judgment interest. Do [10] you remember I went through that with Mr. Staats?
[11] So I ask you to write some of these, [12] down. The demonstratives don't go back to the [13] jury room, so if you want to remember any of these [14] numbers, I would ask that you write them down. [15] The number for the reasonable royalty is [16] \$3,024,409.
[17] And the number for — if you could [18] put the number for the lost profits, \$71,007,251, [19] that's item eight. Reasonable royalty is the one [20] I just mentioned over there, and we're asking you [21] to decide what the reasonable royalty is, and [22] that's 12 percent.
[23] If we have to talk about that [24] anymore, I'll raise it in rebuttal to Mr. Ziegler.

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[1] Thank you for your attention.
[2] THE COURT: Ladies and gentlemen, I [3] think we can benefit from a break. Why don't we [4] do that. Let's take a short break.

[5] (A brief recess was taken.)

[6] THE COURT: Okay. The jury is on [7] the way. Mr. Krupka, I counted, you have 14 and [8] change, but we'll round it up to 15 minutes for [9] rebuttal.

[10] MR. KRUPKA: Thank you, Your Honor.

[11] (Jury entering the courtroom at [12] 10:55 a.m.)

[13] THE COURT: Is everyone all right?
[14] Okay. All right. We'll proceed now. [15] Mr. Ziegler.

[16] MR. ZIEGLER: Thank you, Your Honor. May it please the Court and ladies and [18] gentlemen of the jury, I think there are two [19] things that Mr. Krupka and I actually agree on.

[20] One is our gratitude to you for [21] sitting through this for the last two weeks and [22] paying what I really think is an incredible level [23] of attention that you have paid, and we really [24] appreciate it.

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[1] The other thing that he mentioned [2] that I agree with is the importance of patents. [3] Patents are important. Hamilton Sundstrand [4] believes that patents are important. It has its [5] own patents and it wants others in the world to [6] respect its patents.

[7] But there is a flip side of the [8] importance of patents. Patents encourage [9] innovation and they're important. But if a patent [10] is misused, it stifles competition, and [11] competition in the marketplace is also important.

[12] And part of what makes our society [13] as productive as it is, is the ability of [14] companies to compete with one another.

[15] And the fact is, the evidence that [16] you've heard shows that competition from APIC with [17] the 3200 turned out to be very important in [18] improving AlliedSignal, Honeywell's product.

[19] Because on the very first day of [20] this trial, we heard from Mr. Loranger, and [21] particularly on cross-examination of Mr. Loranger, [22] that back in the days when AlliedSignal had the [23] only APU available for the A320, Airbus' A320 [24] aircraft, the customer, and the airlines didn't

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[1] like it because it wasn't very good.
[2] And you may recall that I showed him [3] an article from Aviation Week magazine in which [4] there were quotes from both Airbus and airline [5] representatives indicating there was a graphic [6] quote from Airbus saying that their APU, the [7] AlliedSignal APU, the 36-300 was a piece of junk, [8] according to Airbus.

[9] And there is no dispute in this case [10] between the parties that the failure of [11] AlliedSignal, now Honeywell, to satisfy its [12] customers needs with its APU is what led Hamilton [13] Sundstrand to develop a competing product with the [14] encouragement of Airbus to do it.

[15] So this is an important case and it [16] raises an important issue. Yes, if the patents [17] are infringed, that's wrong. But it's equally [18] wrong for one competitor, Honeywell, to take a [19] patent that doesn't apply to its competitor's [20] product and sue its competitor, a competitor that [21] came in because Honeywell was not doing a good job [22] to satisfy its customers and say you owe us 70, [23] now it's up to \$73 or \$74 million dollars.

[24] They have to prove that there is

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[1] patent infringement here, and they haven't done [2] it, they can't do it, because the facts of how the [3] APS 3200 controls surge simply do not meet the [4] elements of the patent claims.

[5] And it is significant that despite [6] Mr. Krupka's great eloquence and ability to [7] articulate, that when it comes to the critical [8] issue of what is in the patent claims, and how the [9] APS 3200 works, it doesn't come out clearly. And [10] that's what this case requires, a clear [11] understanding of how the APS 3200 does it, and a [12] clear understanding of what the patent calls for.

[13] And you did not hear in that [14] summation that was wilted with phrases disparaging [15] Hamilton Sundstrand's case and its powerful facts [16] as excuses as plan B and plan G or whatever.

[17] Of course, a company that is being [18] sued for \$70 million is going to provide to you [19] all of the information and all of the bases and to [20] say there is more than one reason why Honeywell [21] loses, that that somehow means none of the reasons [22] are valid really defies common sense.

[23] All Mr. Krupka in terms of validity [24] tried to turn a sow's ear into a silk purse.

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[1] There are numerous articles out there that teach [2] the basic principle of adjusting your set point to [3] control surge by IGV position, numerous.

[4] And his argument is we should have [5] selected one, and the fact that we showed you [6] numerous is somehow a weakness rather than a [7] strength. It turns common sense on its head.

[8] What I would like to do is start [9] with a clear explanation, as clear as I can make [10] it based on the evidence in this case of what the [11] APS 3200 does to control surge and compare it to [12] the only

element of the patent that are really at [13] issue here.

[14] Let me start with the elements of [15] the patents. If we could put on the screen claims [16] eight — let's start with Claim 4. I'll tell you [17] exactly, Stephanie. 51.

[18] And if we could highlight the last [19] portion just above that, but starting two lines [20] above. Now blow that up for us.

[21] This is what this infringement case [22] is all about, ladies and gentlemen. Claim 4 in [23] element C refers to utilizing integral and [24] proportional control signals to operate the bleed

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[1] valve to prevent surge.

[2] And element D says when you're [3] generating their integral and proportional control [4] signals that you're using to prevent surge, to [5] infringe the patent you have to adjust the [6] relationship between the magnitudes or size of [7] those integral and proportional control signals, [8] and the magnitudes of the parameter variations [9] which you now know, we've come an awfully long way [10] in the last two weeks, you now know the parameter [11] variations and the measurement of the air flow or [12] the movement that's going on in the compressor, [13] you have to do an adjustment as a function of the [14] IGV position.

[15] That's the issue. [16] Claim 8 and claim 19 have similar [17] language to this. And maybe we should put up [18] Claim 8. And in Claim 8, it's item F, and please [19] enlarge that.

[20] Again, earlier in Claim 8, there is [21] a reference to proportional and integral control [22] signals to control the surge valve, and F says [23] you're putting into the comparator that generates [24] a signal that varies the set point as a function

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[1] of the position of the inlet guide vanes. [2] And Claim 19 in element G, it's [3] worded had differently but it's really saying the [4] same thing. I don't think there is any dispute [5] between the parties.

[6] Now, let me show what the APS 3200 [7] does and compare it to that claim language because [8] that's what this case is about. That's what [9] Mr. Shinsky did. It's what Mr. Muller when he [10] was asked questions gave answers regarding.

[11] And I'm going to talk about the [12] differences between Mr. Shinsky's testimony and [13] its quality and the quality of Mr. Muller's [14] testimony in a moment. But before I do that, I [15] just want to walk you through what the APS 3200 [16] actually does in light of that claim

language, [17] because as jurors in a patent infringement case, [18] that's what you — the exercise you need to go [19] through to understand it, to determine whether [20] they have proven, met their burden to show that [21] what the 3200 does is described by those [22] elements.

[23] And you recall yesterday in the [24] Judge's instruction, I don't think I need to flash

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[1] it up on the screen — Your Honor, does the jury [2] have their copies of the instructions with them [3] now?

[4] THE COURT: They should.

[5] MR. ZIEGLER: Okay. [6] For infringement, each and every [7] element has to be satisfied either exactly, [8] literally, or in a manner that is just [9] insubstantially different than under the doctrine [10] of equivalents, and every element has to be there [11] before infringement is proven.

[12] Now, if we could put up the chart [13] that is 32. Chart 32. And Stephanie, if you [14] could outline this diagram so it's enlarged.

[15] I'm going to walk over to the Smart [16] Board just because it's closer and I can point to [17] things better.

[18] Ladies and gentlemen, there is no [19] dispute between the parties that this describes [20] the part of the 3200 that generates the [21] proportional and integral signals that control the [22] surge valve. And it's relatively, as things go in [23] the case, straightforward.

[24] You have this circle, which is the

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[1] comparator, and it's comparing two different [2] things. It's comparing the actual values of [3] DELPQP, which you know is the parameter that [4] measures the air that is in the compressor. And [5] it's comparing it to the surge set point, which [6] you know is the desired value.

[7] And if there is a difference between [8] the surge set point, the desired value of this [9] parameter, and what the actual measurement is at [10] DELPQP, there is a difference, and the difference [11] is called an error and it sends an error signal [12] that there is that difference to the PI controller [13] which generates a control signal called BCBVTI.

[14] That's the control signal that [15] operates that surge valve and opens it to exhaust [16] if it needs to and prevents surge.

[17] Now, the input is the value of the [18] parameter, the actual value of the parameter, [19] what's going on in the machine, and the set point, [20] the desired value.

[21] And the input to the set point, the [22]

only input to the set point is temperature. Not [23] IGV position. Temperature is the only thing that [24] governs what that surge set point is.

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[1] And there are four surge desired [2] values, and they're listed on this chart. And the [3] temperatures are listed on this chart. If it's [4] hotter, if it's at least 88 degrees outside when [5] you're sitting in the airport, and the APU is [6] operating, this machine is told by the computer [7] program inside the control box to make the desired [8] value of the parameter .205.

[9] And if the temperature outside [10] changes and it goes down to 87 degrees, or [11] anywhere between 60 and 87 degrees, then the set [12] point changes and goes up to .215.

[13] And if it's a colder day, or you're [14] in a colder place, and it's less than 59 degrees [15] outside, the set point is changed again to .225.

[16] And as a result, depending on the [17] temperature, the desired value changes. The [18] parameter values are what's the air that's going [19] through the system, that's measured by DELPQP.

[20] The comparator compares the two, the [21] desired value against what's going on. And that's [22] what generates the error signal.

[23] So the size of the error signal [24] varies with the set point varied. And the set

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[1] point varies in accordance with how cold or warm [2] it is outside. That's what changes the desired [3] value, and that's what affects the PI controls of [4] your generator.

[5] As a result, the relationship [6] between the value of the parameter, the DELPQP, [7] and the resulting PI control signals is affected [8] by temperature. The air temperature.

[9] There is no dispute that that is the [10] truth. There is nothing about these PI control [11] signals, nothing, ladies and gentlemen, that is [12] affected by IGV position. But what the patent [13] calls for, whether it's in Claim 4 or Claim 8, or [14] Claim 19, and those are the three, the only three [15] claims you really need to focus on, because the [16] remaining three claims are what are called [17] dependent claims.

[18] And if 8 and 4 and 19 are not [19] infringed, then by definition the other three [20] can't be infringed because they just have [21] additional items to them. But they incorporate [22] what's in the other, three others. So it's [23] necessary that eight be infringed before the [24] dependent claims on eight can be in-

fringed.

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[1] So the key issue is the absence in [2] generating those PI control signals, the things [3] that control the surge valve of any input from IGV [4] position. It's not there in the 3200.

[5] Now, IGV position is relied upon in [6] another aspect of this overall system. And I'm [7] going to turn to that right now. But the patent [8] calls for using IGV position to generate the PI [9] control signals that are used to operate that [10] little exhaust valve.

[11] And perhaps I should step back a [12] moment and just review what has come out in the [13] testimony that inside this little compressor [14] that's whirling around and compressing the air for [15] use in the aircraft, if the demand for that air [16] falls, the air flowing through the compressor has [17] no where to go, and surge can occur.

[18] And therefore, to prevent that from [19] happening, the system automatically will open up [20] this valve. If the aircraft doesn't need the [21] compressed air that's being made and therefore the [22] flow inside the compressor is falling because it's [23] got no where to go, this valve is opened, and [24] controlled by these PI signals, so it has

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[1] someplace to go, so that there is enough air [2] flowing through to prevent surge.

[3] And in the 3200, the PI control [4] signals control the operation of that valve to [5] prevent surge. They rely on the desired value, if [6] the parameter value coming in gets into this [7] range, if it's 89 degrees outside, and the [8] parameter value goes below .205, then you're going [9] to have a difference, and then you're going to [10] have a proportional integral control signal that [11] is going to open that valve a little bit, let some [12] air out.

[13] If there is a bigger difference, if [14] your parameter value is way below .205, you're [15] going to get a bigger error signal, it's going to [16] generate a larger signal in the end, the valve [17] will open more. That's what's going on.

[18] Let me turn to how the 3200 does use [19] IGV position. And if we could have the next [20] chart, Stephanie. Do you know which one it is? [21] Could you enlarge it for me?

[22] This is a separate part of the logic [23] that the APS 3200 uses. And what it signifies, [24] this is the — represents the high-flow test. And

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[1] you will recall from the testimony that

this [2] particular parameter, DELPQP which has particular [3] characteristics, follows a curve where it doesn't [4] correlate perfectly with air flow in the [5] compressor.

[6] As flow increases, it goes up. As [7] flow continues to increase, it appears to go [8] down.

[9] Therefore the logic was developed to [10] say which side of that curve are we on so that the [11] system can know if the set point — if the [12] parameter value that's being reported is below the [13] set point, whether it's truly in a high-flow [14] situation, or a low-flow situation. You only need [15] to open your surge valve if you're really in low [16] flow.

[17] Because this particular parameter [18] has this, as Mr. Muller called it, this funny [19] characteristic that you can get a double solution, [20] that you can theoretically have a reading of a [21] parameter value of .18 when you are, in fact, [22] there is a lot of air going through this there.

[23] And you can also get a reading of [24] .18 when you're in low flow, because of that it

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[1] was understood to be a need to have a test to find [2] out if you had this value .18 whether you were in [3] low flow and needed to let your PI signals control [4] the valve or whether you were in high flow, in [5] which there was no need to have the PI signals [6] control the valve.

[7] So there are two parts of the test. [8] The first one, and it's written on this chart, and [9] again, there is no dispute that this is how it [10] works.

[11] If the value of the parameter goes [12] as high as .35, that's way above all those set [13] points, there is no concern at .35 that you're [14] anywhere near the surge limit. You don't have to [15] be, if there is that much movement in the air [16] going through the compressor, you don't have to be [17] opening your exhaust valve.

[18] So if the parameter value goes above [19] .35, this system cuts out those PI control [20] signals, and substitutes a separate signal that [21] everybody agrees is not a [22] proportional and integral control signal. It's [23] just a fixed voltage. And it keeps the exhaust [24] valve shut because you're in high-flow mode, you

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[1] don't have to be modulating or moving that exhaust [2] valve.

[3] And a separate test is built in that [4] involves IGV position, and it also involves [5] pressures and it involves temperature and it is a [6] back up test that if it's not greater than .35, [7] this test determines which side of that curve [8]

you're on. Is it in high flow or is it in low [9] flow?

[10] And if it determines that it is in [11] high flow, all it does is it maintains this [12] constant signal, this non PI signal that's already [13] started to be generated once you got to the .35 [14] line, it just retains it.

[15] And if it determines that you're in [16] low flow, it then allows that — it then chooses [17] the PI signal to operate the surge control valve.

[18] The PI signals that then operate the [19] surge control valve, ladies and gentlemen, are the [20] same ones that are constantly being generated. [21] Regardless of how this test comes out and this [22] lock out of those signals, the PI signals that are [23] generated are the ones that are dependent on [24] temperature.

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[1] So the only role of IGV position in [2] this entire system is a back up test to determine [3] whether because of the funny characteristic of [4] this particular way to measure the air movement, [5] the machine is in high or low-flow mode.

[6] But there is nothing — if we could [7] put the language from Claim 4 back up there.

[8] What Claim 4 calls for, and Claim 8 [9] and Claim 19, is in generating the signals that [10] control the position of that valve and using [11] proportional and integral control signals, that [12] the magnitudes of those signals be affected under [13] the control logic by IGV position.

[14] And that simply does not happen in [15] the 3200. It's just not part of its design.

[16] And conversely, this high-flow test, [17] this back up high-flow test that does monitor IGV [18] position is no where in the patent. And that is [19] what this case is about. And you didn't hear a [20] word of this from Mr. Krupka.

[21] Mr. Krupka contented himself with [22] saying incorrectly that Mr. Shinsky admitted in [23] this courtroom that Claim 4D was satisfied by the [24] 3200. That is simply not the case.

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[1] Initially to support that [2] proposition, Mr. Schlaifer mistakenly put up a [3] snippet from somebody else's testimony entirely, [4] then when Mr. Putnam passed the note and [5] Mr. Shinsky's testimony was put up, you could see [6] that that testimony did not have Mr. Shinsky [7] saying yes, element 4D in the 3200, it adjusts the [8] PI signals in accordance with IGV position.

[9] In fact, during that part of the [10] cross-examination, I have no, ladies and [11] gentlemen, and if you focused on this as I did, [12] but in fact Mr. Putnam at that

point had on the [13] screen, on the big screen element 4D and he had [14] been previously going through the claim, all the [15] elements and asking questions that related to the [16] language in the elements.

[17] And then he put up element 4D. But [18] when he asked the question that I thought was [19] coming about element 4D, he changed the question. [20] He did not track the language of 4D. He [21] substituted questions that you heard just now.

[22] So that there was no statement by [23] Mr. Shinsky that this is satisfied. This is not [24] satisfied and that's exactly what he said.

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[1] Now, conversely, Mr. Muller gave [2] testimony about these same issues. And you may [3] recall on cross-examination by Mr. Herrington that [4] he was asked a key question about this Claim 4.

5] He was asked because the 3200 does
6] not do this, it doesn't adjust the
relationship 7] between the magnitudes
of the integral and 8] proportional control
signals that are used to 9] operate the
bleed valve in accordance with IGV 10]
position.

[11] Mr. Herrington asked Mr. Muller, [12] doesn't he agree that the control signals at issue [13] here have to be used to operate the bleed valve, [14] just as it says in Claim 4C.

[15] And this was what Mr. Muller [16] responded. I'm going to read it to you. It went [17] like this, this is page, starting at page 757, [18] line eight of the transcript, this is [19] Mr. Herrington of Mr. Muller.

[20] QUESTION: Now, in your opinion is [21] that requirement that to utilize the integral and [22] proportional control signals to operate the surge [23] bleed valve require that the system actually [24] utilizes the proportional and integral signals to

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“(1) operate the bleed valve?”

Q [2] A pretty straightforward question. [3] What it says in the claim that those [4] signals have to — are used to operate the surge [5] bleed valve, do you agree that's what it means. [6] Mr. Muller?

171 This is what he said.

[8] "ANSWER: What it says — what it [9] says is that this is a provision which basically [10] states that the integral and proportional control [11] signals simultaneously generated control to [12] operate — let me just — it's the way the wording [13] is phrased here. Yes, what it refers to, it [14] basically just refers to the generation of these [15] signals and then it says — and basically it says [16] these signals are generated to operate the

valve [17] and, in fact, that's what occurs." [18] And Mr. Herrington persisted to see [19] if he can get a clear response from Mr. Muller so [20] he asked the following question:

[21] "QUESTION: My question is, where it
[22] says utilizing said integral and pro-
portional [23] control signals to operate
said surge bleed valve, [24] does that
necessarily require that the integral

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(1) and proportional control signals are used to (2) operate the said surge bleed valve? "

[3] And this is what Mr. Muller said the [4]
next time.

[5] "ANSWER: What it says is that [6] these valves are generated to operate the valve. [7] It does not say to what extent they're operated, [8] over what range. It just simply states that the [9] flow parameter is used, fed through a proportional [10] and integral controller to generate a signal that [11] is available to the bleed control valve, or to a [12] surge control valve, or in the case to a surge [13] bleed valve as the wording in the patent."

[14] Mr. Herrington tried again.

[15] "QUESTION: Just to be clear, it [16] states utilizing said integral and proportional [17] control signals to operate said surge bleed [18] valves?"

[19] "ANSWER: Yes, which is exactly [20] what it does.

[21] "QUESTION: Does it require that [22] they be utilized to operate the said bleed valve?"

[23] "ANSWER: It says nothing here [24] about when it's used and to what extent it's

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[1] used. It basically says that it's available to be [2] used to operate these, the surge bleed valves.

(3) "QUESTION: So a system — could in (4) your view satisfy about this language by not (5) utilizing said integral and proportional control (6) signals to operate said surge bleed valve."

(7) Mr. Herrington is saying utilizing (8) to operate the bleed valve. He's asking Muller: (9) Could that be satisfied by not doing that?

[10] "ANSWER: This language does not [11] put constraint to the utilization of the signals [12] widely proportional and integral controllers to [13] operate the said bleed control valve. It actually [14] states that they be available to be used to [15] operate the surge bleed valve.

[16] "That's the extent of what the [17] statement says in my reading. I mean, I can see [18] where there could be disagreement on that, but [19] that's the way I read that."

[20] Now, ladies and gentlemen, there is
[21] disagreement on that, and it's not
simply [22] disagreement from me.

[23] If you would turn to your copy of [24]
the Judge's charge, jury instructions
from

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[1] yesterday to page 18, you will see that among the [2] instructions the Judge gave you on page 18 was he [3] explained what 4C means in this regard.

[4] And he gave this straightforward [5] interpretation that utilizing those PI signals to [6] operate the bleed valve means those PI signals are [7] utilized to operate the bleed valve.

8] Mr. Muller disagrees with that. It 9]
may be his right to disagree with that, but
you 10] have no right to disregard the
Judge's 11] instruction. You are bound by
it.

[12] So Mr. Muller's analysis of [13] infringement here, at least on Claim 4, is based [14] on an interpretation of the patent claim that is [15] wrong.

[16] The balance of Mr. Muller's [17] testimony was of a piece with the portion that I [18] read for too long, but it was not [19] straightforward. It was not clear. It did not [20] hang together. It was what it was. It went on at [21] great length, and at the end of the day he [22] certainly, in response to Mr. Putnam's questions, [23] dutifully gave the opinion, yes, these elements [24] are satisfied. Yes, there is infringement here.

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[1] but it didn't make any sense.

2] It wasn't tethered to the claims. 3] You may recall, chances are you 4] don't, it's my job to remind you, that in 5] analyzing claims, it was either 8 or 19 that talks 6] about requiring IGV position to be an input into a 7] comparator. He referred to one of their nice 8] charts as the comparator is here, and then to say 9] that IGV position was an input to the comparator, 10] he had to go to a different chart and say, well, 11] there is another comparator over there that IGV is 12] an input to. But there is no comparator over 13] there, and Mr. Shinsky testified to that 14] clearly.

[15] Mr. Shinskey is a fellow with [16] decades of experience and knowledge about [17] controlling compressors. And as you know, has [18] written books and articles, and has been invited [19] to 50 different nations around the world to give [20] lectures about controlling compressors.

[21] He's the real McCoy. He's a genuine
[22] expert. He knows what he's talking
about.

[23] Mr. Muller is a man who lists [24]
himself with a lawyer's service on a

variety of

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[1] different subjects. He's available for hire to [2] come into court and give testimony on a whole [3] bunch of subjects.

[4] He's not written any articles or [5] books that we're aware of, nothing about that was [6] elicited. He has experience with surge control. [7] I don't mean to suggest otherwise, at Exxon, but [8] the comparison between the background and the [9] clarity of their testimony is overwhelming.

[10] And the fact is, the only proof of [11] infringement that Honeywell chose to provide to [12] you was the testimony of Mr. Muller. Hamilton [13] Sundstrand is the defendant here, we're not [14] obligated to put anything on on infringement, we [15] don't have to burden to prove we don't infringe.

[16] Honeywell has the obligation to [17] prove that we do infringe. And the only proof [18] that it offered of that was the testimony, which I [19] frankly suggest to you did not hang together, was [20] not clear, of Mr. Muller.

[21] But we didn't just rest on the fact [22] that Muller is not reliable, we provided you [23] Mr. Shinsky. And Mr. Shinsky is not as [24] garrulous as Mr. Muller. Mr. Muller certainly has.

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[1] a salesman's charm.

[2] Mr. Shinsky provided direct [3] answers. At the end of the day, if the [4] explanation that I've provided based on the [5] evidence does not convince you that there is no [6] infringement here, you need to weigh those two [7] experts, that's your job.

[8] I will note that Honeywell didn't [9] bring a single Honeywell engineer to come in here [10] and testify, in addition to Mr. Muller. And we [11] know that they got the 3200. They got two of [12] them. And we know that they tore that 3200 apart [13] every way from Sunday, and they generated a [14] document that is in evidence, Defendant's Exhibit [15] 45. I believe it's over a thousand pages long [16] called The Benchmark where they compare their [17] newer product, the 131-9A, to the APS 3200.

[18] And ladies and gentlemen, if you [19] look at page 207863 of this document, it's at the [20] very end, there is a bunch of congratulatory [21] E-mails about what a good job the Honeywell [22] employees did in tearing apart the APS 3200.

[23] They say it's the most complete [24] effort in Kapu history. And it refers to the fact

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[1] that the team has produced technical documents [2] with over 60 contributing authors.

[3] So they had 60 engineers pouring [4] over the APS 3200, and they did not bring a single [5] one of them here to testify and support [6] Mr. Muller's conclusion that what the APS 3200 [7] does is anywhere described in their patent.

[8] There's this burden for you to find [9] infringement here. You must conclude as to [10] between Mr. Muller's testimony and Mr. Shinsky's [11] testimony, if you find Mr. Muller more [12] persuasive.

[13] Mr. Muller who in response to [14] Mr. Herrington's questions acknowledged that his [15] interpretation of Claim 4C of the patent is [16] different than Judge Sleet's interpretation that [17] we are bound by.

[18] Based on that, and based on the way [19] it operates, there is simply no basis to find [20] infringement.

[21] Now, let me talk about the doctrine [22] of equivalents for a moment, but first, like [23] Mr. Krupka, I need a drink. More than water, but [24] water is all I got.

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[1] The doctrine of equivalents is [2] important to patents. It makes eminent sense. [3] The doctrine of equivalents says if you change — [4] if you do everything the patent does but you [5] change one little thing in an insubstantial, you [6] can't get away with that.

[7] If you are doing what the patent [8] calls for but in some minor respect you make this [9] insubstantial difference, it's the same as [10] infringement, and that's only fair. If there is a [11] genuine invention out there and it's described [12] accurately, people should be able to invade that [13] by tweaking it a tiny little bit so it's [14] essentially the same thing.

[15] But there is a flip side to the [16] doctrine of equivalents, ladies and gentlemen, [17] which is why the Court in its instruction to you [18] yesterday on the doctrine of equivalents told you [19] you have to pay special vigilance to not let the [20] doctrine of equivalents swallow up the claims.

[21] And the flip side is this, and I [22] actually may agree with a third thing Mr. Krupka [23] said, he said in his opening, patents are like [24] property deeds, you own a house, you own some

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[1] land, the deed denotes. It lays out what is your [2] property and what the dividing line is between [3] your property and your neighbor's property.

[4] And patents in the claims lay out [5] what the inventor is claiming is that other people [6] can't do without his permission. But if you [7] interpret the

doctrine of equivalents broadly, [8] then the rest of the world doesn't know where the [9] claims start and where they start.

[10] And, therefore, the rest of the [11] world would have a risk if they make a product [12] differently. They would not know whether they are [13] infringing or not if the doctrine of equivalents [14] expands those claims, and it would simply be [15] unfair in the same way that if you parked your [16] car, I think that was Mr. Krupka's analogy, on [17] your neighbor's property and he took the air out [18] of the tires, but he hadn't marked the boundary [19] wasn't clear, and you thought you were on your [20] side of it, would be unfair.

[21] And so the doctrine of equivalents [22] has to be confined so that the rest of the world [23] can know that this is the claim. If I don't do [24] that or something very unsubstantially different

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[1] from that, if I do something that moves away from [2] that more than just a small way, I'm Okay. So you [3] can't use the doctrine of equivalents to expand [4] claims.

[5] And that is what Honeywell is trying [6] to do here. Because the 3200 does not use IGV [7] position for the fundamental reason the patents [8] say to use it. They say use IGV position to [9] control the surge valve by effecting your desired [10] values.

[11] It's in Claim 4. It says adjust the [12] PI signals that are used to control the valve in [13] accordance with the IGV position. It's in Claim 8 [14] where the word set point is actually used, use IGV [15] to control your set point, the desired value. And [16] it's in Claim 19 where it says use IGV position to [17] go in a function generator and both experts agree [18] that that is doing the same thing. It's using IGV [19] position to determine how much or how little [20] you're controlling your bleed valve.

[21] And that's not what the 3200 does. [22] And it's not what the 3200 does at any time. [23] Mr. Krupka made a point and he showed you the [24] Judge's instruction that there is still

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[1] infringement if you infringe part of the time.

[2] Well, if the PI signals that were in [3] the 3200 in that first chart — could you put that [4] first chart back up, Stephanie and enlarge it [5] again.

[6] What that means is if these PI [7] signals were in fact affected by IGV position, if [8] the set points were varying in accordance with the [9] schedule of IGV positions which is what the patent [10] calls

for, but they were cut out some of the time, [11] then that would constitute part-time infringement, [12] because part of the time the PI signals would in [13] fact be influenced with the IGV position.

[14] And I agree, if the PI signals [15] aren't constantly used, but when they are used [16] they're influenced by varying the set point by IGV [17] position, then that would be part-time [18] infringement.

[19] But these PI signals are never [20] influenced by IGV position. It's simply not an [21] input to them at any time. And so there is no [22] part-time infringement here.

[23] Nor is the use of temperature, as [24] Mr. Krupka tried to suggest, a mere addition to

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[1] everything else that's in the patents.

[2] There were two inputs here, [3] temperature and IGV position, there would be some [4] sense to that argument. Because then he could say [5] hey, you're affecting your surge set point by IGV [6] position. The fact that you're also affecting it [7] by temperature, is an addition, doesn't mean you [8] infringe, that would be right. But that's not the [9] facts.

[10] The doctrine of equivalents, the [11] Judge has charged you, is that it has to be a [12] minor — sorry, he didn't use the word minor, an [13] insubstantial difference. The difference here is [14] fundamental. The PI control that operates that [15] surge involves simply not affected by IGV [16] position.

[17] IGV position is used for this [18] secondary part of a test just to determine if the [19] parameter value is reliable or not. That is very [20] far afield from what these patents are talking [21] about.

[22] That's why in my opening I [23] analogized it. I will reread the analogy, its not [24] perfect, no analogy is perfect. You may recall in

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[1] my opening, Mr. Krupka just referred to it again, [2] that I analogized what is going on here to my [3] household and to the fact that in my household, [4] this is true, my wife has control of the [5] temperature set point.

[6] I personally wish I had control of [7] the temperature set point in this room, but I [8] don't. And that is an important function.

[9] I have a function with respect to [10] our heating system. I go down to the cellar once [11] a week and make sure there is enough water, the [12] water level in the boiler is right. They are both [13] roles in controlling the heating in our house.

[14] If somebody had a patent on the [15]

notion that only the kids — pardon me, only the [16] men should control the thermostat in the house and [17] they came into my house and they said you've [18] stolen our idea because we think you're doing the [19] same thing, it's functionally the same thing.

[20] Yes, it's true we see your wife is [21] the one who is controlling the thermostat but [22] you're going down in the cellar once a week, have [23] a role in the heating system.

[24] IGV position in the 3200 hundred

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[1] does have a role in respect to this high-flow [2] test, but it is not the role that is assigned to [3] IGV position in the patent. And there is no way [4] that the doctrine of equivalents could possible be [5] used to stretch those patent claims so broadly to [6] say that as long as IGV does something in [7] connection with this issue, that's enough.

[8] The Judge instructed you that in [9] determining whether something is an insubstantial [10] difference or not, you can look at its function. [11] You can look at the way it does it. You can look [12] at the result it achieves. And if you apply that [13] test, the function, the way, the result, there is [14] no way you can conclude that that difference is an [15] insubstantial one.

[16] Let me turn quickly to the issue of [17] willfulness. Mr. Krupka, I think, makes two [18] points on willfulness, broadly speaking. One is [19] that Hamilton Sundstrand was aware of these [20] patents for years, and did nothing to investigate [21] whether the 3200 infringed or not, until Honeywell [22] provided notice in February of 1999.

[23] Well, part of that is true. [24] Hamilton Sundstrand was not aware of any

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[1] connection between the Honeywell patents and its [2] 3200 product, until February 3rd, 1999 when it [3] received a letter from Honeywell, which is in your [4] jury books, saying we think you infringe these [5] patents and some other patents.

[6] And at that point when it got that [7] information, when it was told that, within days, [8] not months, not years, within days it did what the [9] Judge's charge suggests is appropriate. I didn't [10] think for a company to hire a responsible outside [11] patent counsel to analyze it. And that happened.

[12] Hamilton Sundstrand retain Mr. [13] VanSanten and his firm. They did a very thorough [14] analysis. They reported back. There is no [15] infringement here. And that opinion from [16] Mr. VanSanten is in your jury books. It's an [17] exhibit, as

is the testimony that we didn't read [18] yesterday about all the work that he did and his [19] colleagues did in reaching that conclusion.

[20] So the issue here is was Hamilton [21] Sundstrand under some obligation to do something [22] more than it did assuming there was infringement, [23] which, of course, I've just finished, there is no [24] way you can conclude based on the — Mr. Muller's

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[1] testimony that there was.

[2] But, I don't know, I won't be in the [3] jury room with you, so I need to discuss all these [4] other issues.

[5] Is there any reason in common sense [6] that Hamilton Sundstrand should have done [7] something prior to 1999 when it got that letter to [8] determine if it infringed these patents?

[9] Well, you heard directly, firsthand [10] from Mr. Greubel, one of the engineers who was [11] involved in developing the surge control logic in [12] the 3200. And he told you several important [13] things. You may recall that I asked him, the [14] folks who had — I listed the names of the [15] Hamilton Sundstrand people who were associated [16] with those patents, the ones that Mr. Krupka says [17] — recited where the patent office said about the [18] Stokes patent, among others.

[19] And Mr. Greubel told you that one — [20] one of them wasn't even in the company anymore at [21] the time they were working on the surge control [22] logic of the 3200. Two of them were still with [23] the company but in a completely separate building [24] a mile away. And three of them he never heard of.

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[1] So those folks had no role, the ones [2] who had, according to Mr. Krupka's argument, some [3] information about the Stokes patent didn't have [4] any role in developing this surge control logic.

[5] So that the fact that they [6] encountered the Stokes patent in some unrelated [7] context does not tell the company, gee, there is [8] some connection between the Stokes patent and what [9] we're doing here.

[10] And there was testimony on video [11] from Mr. Crowe who was a lawyer, now with [12] Mr. VanSanten's firm but previously at Hamilton [13] Sundstrand, about the fact that Hamilton [14] Sundstrand gets lots of patents. It makes lots of [15] patent applications. The patent office often [16] cites other patents as prior art in that process.

[17] And on average, there may be [18] hundreds of such patents that the patent lawyers [19] in Illinois encounter in the